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ABSTRACT

This document contains four papers from a symposium on the discipline of human resource development (HRD). "The Discipline of HRD" (Richard A. Swanson) frames the discipline of HRD by identifying its context and component theories--general systems, chaos, and futures. "Systems Theory as a Foundation for HRD" (Wendy E.A. Ruona) defines this evolving field in terms of its scope and meaning; underscores why systems theory must be a foundational theory; offers a framework to organize themes emerging from the literature of how systems theory supports HRD; and discusses current challenges and how systems theory relates to the disciplines of economics and psychology. "Psychology and the Discipline of HRD--Contributions and Limitations" (Elwood F. Holton III) examines psychology's theoretical contributions; argues that psychological theories are both powerful and limited as a foundation for HRD; and discusses specific psychological theories and their conceptual relationships with economic and systems theory. "Economics--Human Capital Theory and HRD" (Richard J. Torraco) argues for including economics as a central element of HRD's theoretical foundation. (YLB)

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The Discipline of Human Resource Development
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Systems Theory as a Foundation for HRD
Wendy E. A. Ruona, University of Minnesota

Psychology and the Discipline of HRD--Contributions and Limitations
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Economics-Human Capital Theory and Human Resource Development
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Oak Brook, IL

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The Discipline of Human Resource Development

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The purpose of this manuscript is to frame the discipline of human resource development by identifying its context and component theories.

The bias of HRD has been the belief that organization performance is mediated through human expertise and human effort. In contrast to this belief the performance scorecards available to organizational decision makers generally ignore these elements. The most evident example is the short-term view of economic of company performance as judged by daily stock market data.

The journey of understanding performance for those who share the "human lens" has not been easy. The range of performance perspectives forces the HRD profession to face the realities of how others strategically view us and how we view ourselves (Torraco & Swanson, 1995; Swanson, 1995). It seems as though HRD has taken a detour during the past fifty years. The massive "Training Within Industry" (TWI) project that culminated with the ending of W.W.II is seen as the origin of contemporary performance improvement through HRD (Dooley, 1945; Ruona & Swanson, 1998; Swanson & Torraco, 1994). The performance language was simpler then– "is it a production problem?" they would ask. If yes, they would ply performance improvement tools that were masquerading under the name of "training." Besides operating under a training title that they quickly outgrew, the Training Within Industry (TWI) project delivered on organization, process, and individual performance outputs using simple and powerful tools the called: job instruction, job relations, and job methods.

The harsh reality is that most decision makers in organizations pursue performance with or without professional HRD interventions. This simple fact confronts the HRD profession with the need to think about performance with or without the human lens. The willingness to *temporarily* let go of the human lens in favor of a performance lens is the key to elevating HRD to its fullest potential. Without this fundamental mental shift, HRD will awkwardly keep trying to get to system performance (organization) through sub-system performance (individual). I personally have enough confidence that best HRD theory and practice will invariably validate the contribution of human expertise and the unleashing of it as integral to HRD.

The simple decision to begin with the host system as the primary avenue to performance alters the models, thinking, and tools of a HRD effort. Without this shift beyond the individual, the performance lens remains clouded, the underlying theory remains unclear and/or unstated, and the research questions are automatically limited.

Real Performance is Output To perform is "to fulfill an obligation or requirement; accomplish something as promised or expected." (*The American Heritage College Dictionary*, 1993, p. 1015). Performance is not system design, capability, motivation, competence, or expertise. These, or other similar performance taxonomies, can be best thought of as *performance variables*, but not performance. Performance may be identified within missions, goals and strategies– but, not always. *Performance is the valued productive output of a system in the form of goods or services*. The actual fulfillment of the goods and/or services requirement is thought of in terms of *units of performance*. These goods and/or services units of performance are typically measured in terms of production quantity, time, and quality features.

Chasing after individual or organization change without first specifying a valid unit of performance is inane. This is because change can take place while "real" performance decreases. One example is to pursue employee satisfaction with the assumption that production will increase. There are numerous studies demonstrating that employee satisfaction can increase while actual production decreases or remains the same. The recent reenginneering fad is another vivid example of the pursuit of change with the majority of instances ending up in losses in performance, not the promised gains from the mere act of a particular type of promising change (Micklethwait & Wooldridge, 1996). There are those in the profession speaking directly to the topic of performance in an attempt to clarify the relationships among performance drivers (Holton, in-press; 1998) and/or performance variables (Swanson, 1994, 1996).

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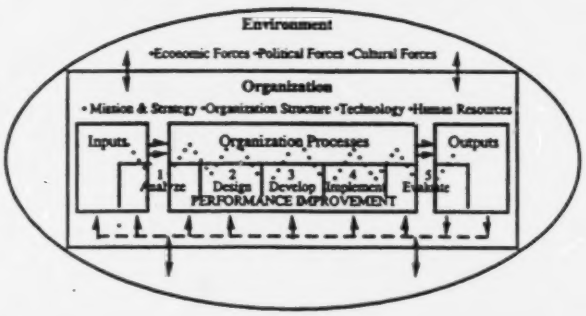
Systems theory informs us that (1) there are systems and sub-systems, and (2) that all systems are open systems. The realization that there are tiers of sub-systems, larger host systems, and that systems are open entities that are constantly changing is humbling. These realizations help professionals from thinking and acting simply and mechanically. A mental picture of the constantly evolving state of being should be held in the minds of HRD practitioners and scholars.

The larger frame in which HRD functions includes organizations and the milieu in which they function. Organizations are the host systems for most HRD activity. Some of these systems are profit-making organizations that produce goods and/or services for consumers. Some are non-profit organizations that produce goods and/or services for consumers. Some are publicly owned, some are shareholder owned and publicly traded, and some are owned by individuals or a group of individuals. All these organizations function in a political, cultural, and economic milieu that is ever-present. Each has its own mission/strategy, structure, technology, and human resource mix. And, each has core processes related to producing the goods and services it produces.

The expectation is that HRD efforts will logically culminate with important positive gains in performance for its host organization. Additionally, HRD itself can be viewed and pursued as a performance improvement process functioning within the host organization. All of this is graphically portrayed in Figure 1 as a Systems Model of Performance Improvement, a process working with other core processes within the organization that is functioning in the larger organizational context. For HRD, the final phase is focused on the assessment of performance results so as to heighten the intent of the performance improvement process.

Figure 1
Systems Model of Performance Improvement:
(HRD is a subsystem of performance improvement)



Performance improvement phases (analyze, design, develop, implement, & evaluate) within the organization.
Richard A. Swanson (1994). ANALYSIS FOR IMPROVING PERFORMANCE. San Francisco: Berrett-Koehler. Page 251

While performance will likely always demand multiple interpretations, performance, and more importantly, performance improvement, are not simply abstract notions about desirable ways to reach a better state. In every workplace the concrete determinants of performance are reflected in people, their ideas, and the material resources through which their ideas reach the marketplace. Performance cannot be described or improved without specifying its determinants, accounting for the sophisticated processes through which performance is expressed (e.g., human behavior, work process innovation, stock market performance), and making some judgment about whether or not performance has, in fact, improved. Performance improvement can only be manifest through outputs, and change in outputs can only be assessed through some form of measurement. Thus, performance is a concept that can be systematically operationalized in any organization when we set out to demonstrated whether or not it has improved.

Theoretical and Disciplinary Foundations

HRD is broader than any single set of disciplinary practices. Reflecting the reality that most successful strategies for system and sub-system improvement require multi-disciplinary interventions, the theory of improvement derives from multiple theories. This section develops a broad theoretical foundation for HRD drawing on contributions from several respected theoretical domains.

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"A theory simply explains what a phenomenon is and how it works (Torraco, 1997, p. 115), while "a discipline is a body of knowledge with its own organizing concepts, codified knowledge, epistemological approach, undergirding theories, particular methodologies, and technical jargon" (Passmore, 1997 p. 201). The idea that HRD is a discipline that draws upon many theories is widely held. This overly generous idea has served as fools' gold to the profession. In the attempt to be inclusive of so many theories-- staking its claim so broadly-- it has come up with no theory.

Theory versus Model Models to improve performance have been developed and disseminated through books, seminars, and consulting projects. Several of these models are based on extensive practical experience with improving performance (Nadler, Gerstein, & Shaw, 1992; Rummler & Brache, 1995; Schwartz, 1991; Swanson, 1994; Weisbord, 1987). Other models for improving performance have been embraced as ways to solve performance problems by addressing them as multi-dimensional problems that demand multi-dimensional solutions and some available models for performance improvement are little more than diagrams based on the author's most recent consulting experience.

Armed with a flowchart and a description of its components, HRD professionals using these models march into the workplace to affect change and find that while they may be powerful enough to effect change, they are most likely too superficial to *explain* the complex dynamics of organizational performance. In short, a model derived from logic is no substitute for sound theory. Such models can guide improvement efforts through hypothesized relationships without having those relationships ever tested. You can have a model and no theory, you can have a theory with no model, and you can have a theory accompanied by a supporting model. A model is not theory.

Disciplinary Theory for HRD Presently there is no universal view or agreement on the theory or multiple theories that support HRD as a discipline. Furthermore, there are no theory alternatives being visibly proposed in the literature and being debated by the profession. On one hand some have called for systems theory to serve as a unifying theory for HRD to access all useful theories as required (Gradous, 1989; Jacobs, 1989) and on the other hand many have proposed sets of principles in the forms of comparative lists of added value, products, processes, and expertise.

The alternative to having a sound theoretical and disciplinary base for the HRD profession is the present state of rudderless random activity aggressively sponsored by atheoretical professional associations and greedy consultants (Micklethwait & Wooldridge, 1996; Swanson, 1997). This present state celebrates short-term results without having deep understanding or the ability to replicate results.

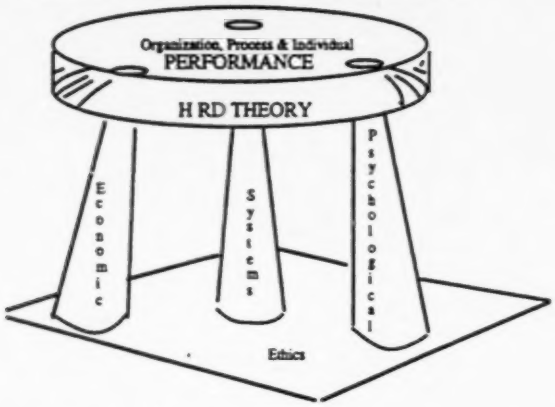
For this reason, a discrete and logical set of theories as the foundation of HRD is proposed. It is comprised of psychological theory, economic theory, and systems theory (Passmore, 1997; Swanson, 1995). Economic theory is recognized as a primary driver and survival metric of organizations, systems theory recognizes purpose, pieces, and relationships that can maximize or strangle systems and sub-systems, and psychological theory acknowledges human beings as brokers of productivity along with their cultural and behavioral nuances. It is believed that these three theories-- more than any others-- make up the discipline of HRD, respond to the realities of the HRD profession, and that each is unique, complimentary, and robust.

The theories have been visually presented as comprising a three-legged stool, with the three legs providing great stability for HRD as a discipline and field of practice that functions in the midst of uneven and changing conditions (see Figure 2). In recent years, particularly with the advance of the global economy and an unbridled free-market condition, the stool has been positioned on an ethical rug-- a filter, if you will-- between its three theories and the context in which HRD functions. Thus, the three theories are at the core of the HRD discipline, and ethics plays an important moderating role.

Economic Theory Foundation The minimization of economic theory in HRD is untenable. For example, the widely used book on organization development, *Organization Development and Change, 5th Edition* (Cummings & Worley, 1993) does not even have the words, "economic," "financial," or "cost-benefit analysis" in the index. The organization development literature addresses the psychological theory leg of the theory stool and a portion of the systems theory leg and regularly ignores the economic leg. As a result, what is called organization development is reduced to individual development or team development in hopes of achieving improvement in organizational performance. While there is still much is to be learned,

a substantial amount of information about the economics of short-term interventions (Swanson & Gradous, 1988) and broader-based investments (Lyau & Pucel, 1995) is available.

Figure 2. The Theoretical Foundations of Human Resource Development



How could responsible HRD not include direct analysis, action, and measurement of economic outcomes? Over time, organizations must generate more income than they spend in order to exist. Unless expenditures on HRD contribute to the viability and profitability of an organization, those expenditures will almost certainly be reduced or eliminated. Three specific economic theory perspectives are believed to be most appropriate to the discipline of HRD: (1) Scarce Resource Theory, (2) Sustainable Resource Theory, and (3) Human Capital Theory.

Scarce Resource Theory. Scarce resource theory informs us that there are limitations to everything. The limitations in money, raw materials, time, etc., require us to make choices as to how capital will be utilized in order to gain the greatest return. Decision makers choose among options based on their forecasted return-on-investment. This is a simple and powerful notion that forces decision makers to separate the most valuable initiatives from the many things that they would like to do if there were no resource limitations (Swanson & Gradous, 1986).

Sustainable Resource Theory. Sustainable resource theory is much like scarce resource theory except for one major point: The concern for the long-term versus short term agenda. Thurow (1993) informs us that "in the future, sustainable advantage will depend on new process technologies and less on new product technology. New industries of the future depend... on brain power. Man-made competitive advantages replaces the comparative advantage of Mother Nature (natural-resources endowment) or history (capital endowments)." (p.16).

Human Capital Theory. Becker's classic book, *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education, 3rd Edition* (1993), illustrates this domain. Becker implores the reader, "I am going to talk about a different kind of capital. Schooling, a computer training course, expenditures on medical care, and lectures on the virtues of punctuality and honesty are capital too, in the true sense that they improve health, raise earnings, or add to a person's appreciation of literature over lifetime. Consequently, it is fully in keeping with the capital concept as traditionally defined to say that expenditures on education, training, and medical care, etc., are investments in capital." (Becker, p 15-16). These are not simply costs, but investments with valuable returns that can be calculated.

Conclusion. Economist Alfred Marshall argues that, "the most valuable of all capital is that invested in human beings."(1949). Since HRD takes place in organizations that are economic entities, HRD must call upon economic theory at its core. In addition, management theories and methods should be properly viewed as useful derivatives of economic theory (See Drucker, 1964).

Psychological Theory Foundation The psychological theory which HRD can draw upon is immense. It includes theories of learning, human motivation, information processing, group dynamics, and psychology-based theories of how we make decisions and behave in organizations. Yet it has been poorly interpreted by the profession. Most practitioners grab onto a small and relatively irrelevant slice of psychological theory and act upon it in exaggerated ways. Examples include fascination with whole-brain theory and personality types. Passmore (1997)

informs us that, "psychology is the science of behavior and mental processes of humans and other animals. Beyond that, we have something that resembles a teenager's closet." (p. 210).

While psychological theory may have something for everybody, HRD has yet to fully capitalize on its leverage to improve performance. At best, the HRD literature addresses the psychological theory leg of the theory stool in an unpredictable manner. Interestingly, the widely used book on training, *Training in Organizations: Needs Assessment, Development and Evaluation, 2nd Edition* (Goldstein, 1986), is almost exclusively focused on the behaviorist school of psychology and does not deal in any meaningful way with Gestalt psychology or cognitive psychology (purposive-behaviorism). Add to this the fact that HRD interventions are rarely systematically connected to the economic agenda via a systematic analysis of the organization and its goals (Swanson, 1996), and it is no wonder that HRD interventions based only on psychological theory are often dismissed as irrelevant by organization leaders.

Fascination appears be the watchword of the psychological leg as questions from psychology are typically narrow and/or disconnected from the core purpose of the organization, the work process, and often even the individual. For example, the continued fascination of such topics as transfer-of-training from the psychology perspective mostly focus on the individual and individual perceptions. The response to this state for HRD appears to be best derived through the addition of systems and economic theory, not psychological theory alone (Holton, 1996).

How could responsible HRD not integrate and use the vast body of knowledge from psychological theory? With such vast and divergent psychological theory available, it is more appropriate to focus on core understandings related to behavior and learning rather than fringe psychology theories and techniques. Three specific psychological theory perspectives are proposed here to be most appropriate to the discipline of HRD: (1) Gestalt psychology, (2) behavioral psychology, and (3) cognitive psychology (purposive-behaviorism).

Gestalt Psychology. Gestalt is the German term for configuration or organization. Gestalt psychologists inform us that we do not see isolated stimuli, but stimuli gathered together in meaningful configurations. We see people, chairs, cars, trees, and flowers– not lines and patches of color. Gestaltists believe that people add something to experience that is not contained in the sensory data, and that we experience the world in meaningful wholes (Hergenhahn & Olson, 1993) Thus, learning involves moving from one whole to another. Words associated with gestalt psychology include introspection, meaning, closure, insight, life space, field theory, humanism, phenomenology, and relational theory. The holistic view of individuals and their own need for holistic understanding is in sharp contrast to a mechanistic and elemental view of human beings.

Behavioral Psychology. Behavioral psychology is concerned with what can be seen, and therefore behavior is what is studied. Behavioral psychologists inform us that individuals respond the only way they can given their capacity, experience, and present forces working on them. No more introspection, no more talk of instinctive behavior, and no more attempts to study the vague notions of human conscious or unconscious mind. Words associated with behaviorism include: readiness, law effect, exercise, recency, frequency, stimulus, response, reinforcement, punishment, programmed learning, and drives.

Cognitive Psychology. Tolman's term of purposive behaviorism has been selected as the exemplar of this third important perspective from psychology. Purposive-behaviorism attempts to explain goal-directed behavior and the idea that human beings organize their lives around purposes. Purposive-behaviorism and other cognitive psychology's attempt to integrate theory from gestalt and behavioral psychology.

"For Purposive Behaviorism, behavior, as we have seen, is purposeful, cognitive, and molar, i.e., 'Gestalted.' Purposive Behaviorism is molar, not a molecular...." (Tolman, 1932, p. 419). Words associated with cognitive psychology, including purposive-behaviorism, include: drive discriminations, field-cognition modes, cognitive map, learning by analogy, learned helplessness, structuring, information processing, short term and long term memory, and artificial intelligence.

Conclusion. Since HRD takes place in organizations that are psychologically framed by those who invented them, operate in them, and renew them, HRD must call upon psychology as being core (see Argyris, 1993; Bereiter & Scardamalia, 1993; Dubin, 1976). In addition, learning theories such as constructivism and situated cognition should be properly viewed as useful derivatives of psychological theory. Performance cannot be improved if people choose not to perform, put forth little effort, or do not persist in their efforts (Bereiter & Scardamalia, 1993). Moreover, systematically designed learning experiences and workplace systems provide a durable

foundation for performance improvement. Thus, theories of learning, human motivation, information processing, and other psychologically-based theories provide a core theoretical foundation for the discipline of HRD.

Systems Theory Foundation Systems theory, a relatively small body of knowledge compared to economics and psychology, contains a harvest of low-hanging fruit for HRD. From a systems theory perspective, there is a wide range of systemic disconnects adversely affecting performance. Two include not being able to clearly specify the required outcomes of the host organization and not having a systematically defined HRD process (see Rummler & Brache, 1995).

Systems theory is a relatively young discipline made up of "a collection of general concepts, principles, tools, problems and methods associated with systems of any kind." (Passmore, 1997, 206-7). Jacobs's (1989) manuscript, "Systems Theory Applied to Human Resource Development," called for the profession to adopt systems theory as the unifying theory. McLagan's (1989) thoughtful reaction, "Systems Model 2000: Matching Systems Theory to Future HRD Issues," fully supported Jacobs's thesis of the importance of systems theory for HRD, but challenged him and the profession to think about and work within a more expansive and tiered world of systems.

Three specific systems theory perspectives are proposed here to be appropriate to HRD: (1) general systems theory, (2) chaos theory, and (3) futures theory.

General Systems Theory: At the core, General Systems Theory (GST) forces us to talk intelligently about inputs, processes, outputs and feedback. Furthermore, GST informs us of the reality of open systems (vs. closed systems), that systems engineering focuses on the less dynamic aspects of the organization, and the limitations of a single personality theory in predicting human behavior (Bertalanffy, 1962).

Boulding's (1956) classic article on general systems theory informs us of the paradox of a theory so general as to mean nothing and the seeming inability of a single theory from a single field of study to ever reach a satisfactory level of theory generality. He goes on to talk about the power of a "spectrum of theories," a "system of systems" which would perform the function of a "gestalt" in theory building (Boulding, 1965). "General Systems Theory may at times be an embarrassment in pointing out how far we still have to go." (Boulding, 1965, p. 10)

Chaos Theory: "Where chaos begins, classical science stops.....chaos is a science of process rather than a state, of becoming rather than of being (Gleick, 1987, p. 3- 5)." Chaos theory confronts Newtonian logic head-on by offering a revised motto away from determinism to something much softer: "Given an approximate knowledge of a system's initial conditions and an understanding of natural law, one can calculate the approximate behavior of the system." (Gleick, 1987, p. 15). Chaos theory purposefully acknowledges and studies phenomena that are unsystematic– that do not appear to follow the rules.

Futures Theory: Futures theory is "... not necessarily interested in predicting the future, it is about the liberation of people's insights." (Schwartz, 1991, p. 9). Thus, futures theory, in context of planning for the future in uncertain conditions, in no way resembles the reductionist view of most strategic planning efforts that end up with a single strategy. The language and tools of *alternative futures* and *scenario building* are intended to create a true picture of the facts, the potential flux in those facts, and the decision-making agility required of the future. Futures theory is critical for sustainable performance in that it prepares one to recognize and cope with an evolving future state.

Conclusion. Since HRD takes place in organizations that are themselves systems and subsystems functioning within an environmental system that is ever-changing, systems theory is at its core (see Buckley, 1968; Gradous, 1989). In addition, engineering/technology theories and methods should be properly viewed as useful derivatives of systems theory (see FitzGerald & FitzGerald, 1973; Davenport, 1993) even though they have a longer scholarly history.

Ethics As noted earlier, ethics is viewed as the critical supporting theory for HRD. It serves as the filter between the three core theories of economic, psychology, and systems and the context within which performance improvement efforts take place.

The ethics angst within the profession, under the name of integrity, was the theme of the 1996 Academy of Human Resource Development Conference (Holton, 1996). Two primary integrity perspectives are proposed: integrity in ethical *beliefs* and integrity in using the high quality *processes* (Jacobs, 1996) .

From the ethical beliefs perspective, some argue about the exploitive nature of organizations and would criticize HRD as an unthinking arm of management (Korten, 1995) challenging the profession to act as the agent of democracy and equity (Dirkx, 1996). Others argue that exploitation is a much more expansive concept (e.g. employees can exploit their employers), and that it must be dealt with as such (Swanson, Horton, & Kelly, 1986). It is the distribution of the spoils of performance and the relative costs paid to obtain performance that is the bogeyman of most performance discussions, and one that should be purposefully dealt with.

Maintaining the present substandard conditions is lucrative for profit providers of conferences and trade publications, publishers of books and media, circuit speaker "celebrities" and fad consultants. These elements will be a likely force of resistance to core ethical questions.

Conclusion

The purpose of this manuscript is to frame the discipline of human resourse development by identifying its component theories.

Research in the realm of theory requires that theories be developed through rigorous theory building research methods (Dubin, 1969; Hearn, 1953; Torraco, 1997), or that espoused theories be evaluated against criteria for sound theory (Patterson, 1983). HRD is presently replete with atheoretical models (not theories) and thin espoused theories.

If theory just happened as a result of practice, the development of human resources theory bucket would be overflowing. Instead, our massive field of practice is experiencing a "theory application deficit disorder." (Swanson, 1997). Fulfilling HRD's performance improvement mission through gathering and/or building the HRD discipline around the proposed theories is fundamental to the maturation of the profession.

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Systems Theory as a Foundation for HRD

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The paper investigates the contribution of systems theory to HRD. It defines this evolving field in terms of its scope and meaning and underscores why systems theory must be a foundational theory. It offers a framework to organize themes emerging from the literature of how systems theory supports HRD. Finally, some current challenges and how systems theory relates to the disciplines of economics and psychology are discussed.

It is widely acknowledged that HRD is a discipline rooted in multiple theories. It is true that HRD utilizes many theories. However, all of these theories do not provide the foundation of HRD. A foundation is the basis on which a thing stands and is comprised of those elements that are essential to its survival. For a profession such as HRD, a foundation must be theoretically sound and its professionals must be well-versed in what comprises that core. Indeed, Warfield (1995) regarded the specification of foundations as central to the progress of a discipline when he stated that, "Science is a body of knowledge consisting of three variously integrated components: foundations, theory, and methodology. Foundations inform theory and the theory informs the methodology" (p. 81).

Systems theory has been proposed here as one of three theories that constitute HRD. This proposition is unlikely to be met with much opposition as many professionals and scholars have acknowledged that it is an essential component of HRD work. While many are committed to systems theory implicitly, if not explicitly, the incorporation of it into our foundational base, theories, and methodologies has yet to fully take hold. The goal of this paper will be to investigate the contribution of systems theory to HRD.

A Review: What is Systems Theory?

Systems theory is simply a theory concerned with systems, wholes, and organizations. Beyond this elementary description, there is not one correct way to define it. Even Von Bertelannfy (1968) who is widely acknowledged as the father of general system theory does not offer one clear definition but rather focuses on describing its scope and meaning.

Scope Describing this burgeoning theory is increasingly difficult as various facets of the approach develop. Multiple fields claim to be descendants of systems theory. Although all these related fields are distinctively different, they align in their concern with system. Four of these fields, in particular, are dominating current discussion in systems theory.

General Systems Theory. General systems theory is known for focusing multiple disciplines on wholes, parts, the organization and connectedness of the various parts, and the relationships of systems to their environment.

Cybernetics. Cybernetics is the science of information, communication, feedback, and control both within a system as well as between a system and its environment. Its focus is more on *how* systems function, rather than the *structure* issues emphasized in general systems theory. The result of much of its core work has been defining heterogeneous interacting components such as mutuality, complementarily, evolvability, constructively, and reflexivity (Joslyn, 1992).

Chaos. Chaos theory is the "qualitative study of unstable aperiodic behavior in deterministic non-linear dynamically systems" (Kellert, 1993, p. 2). This theory revolutionized science through its discovery that complex and unpredictable results were actually not random but, rather, could be expected in systems that are sensitive to their initial conditions. Behavior

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that had been assumed to be random in systems of every type was actually found to be bounded and operating within recognizable patterns. Now it is widely recognized that forces in a system endlessly rearrange themselves in different, yet similar patterns. The resulting hidden qualitative pattern is coined chaos, fractal, or strange. Chaos theory seeks to understand this ordered randomness and enables scientists to discover and study chaotic behavior.

Complex Adaptive Systems. This sub-field has emerged most recently out of chaos theory. This field inquires into a more holistic view of the behavior of complex systems. Recent research has revealed that chaos is only one of four possible states into which behavior of complex systems may be classified (Phelan, 1995). The theory of complex adaptive systems proposes that complex systems emerge and maintain on the edge of chaos—the narrow domain between frozen constancy and chaotic turbulence (Heylighten, 1996). It proposes that systems function in an area of complexity between chaos and order. Furthermore, systems in this state conduct self-organizing and learning processes which include structural change through self-renewal (replication, copy and reproduction), nonlinear flows of information and resources, and "far-from-equilibrium conditions that create a dynamic stability where paradox abounds" (Dooley, 1996, p. 20).

Meaning The meaning of systems theory may do more to define it than the than the descriptions offered above. A synthesis of literature illuminates that systems theory is a few distinct things. It is (a) an ontology—a philosophy of nature & systems, (b) an epistemology—a way to view or understand the world, and (c) a unifying theory

An Ontology: The Nature of the World & Systems. Systems theory began with a reorientation of the philosophy of nature. Systems theory is, at its most fundamental level, a belief about the world—"a belief that the world is made up of set(s) of interacting components, and that those sets of interacting components have properties, when viewed as a whole, that do not exist within any of the smaller units" (Heylighten & Joslyn, 1992). Systems theory reveals a multi-tiered world comprised of sub-systems within systems within environment—all of which are regulated through a set of relationships. Secondly, systems theory provides a storehouse of information about the nature of systems. New discoveries about systems' structures and processes offer increasing detail crucial to understanding the basic workings of the world.

An Epistemology: A Way to View the World. Systems theory is also a fundamentally different way of viewing reality. It is now thought to be complement, rather than a substitute to more specialized ways of seeing the world. It is all-embracing, incorporating reductionist perspectives as simply one aspect of a general conceptualization. A premise of systems theory is that systems ultimately are mental constructs. Systems theory, or systems thinking, fosters a way of understanding the world in a more holistic way. This way demands that the pieces of the world are not viewed separately. Rather, the theory provides a way to see and know the world—realizing the connections and the dynamics that make the whole something more than the sum of its parts.

Although systems theory contributes the two distinct meanings described above, a recent article by Laszlo & Laszlo (1997) captures the somewhat indescribable meaning of systems theory when they state:

> Systems sciences defy classification as constituting either an epistemology or ontology. Rather, they are reminiscent of the Greek notion of gnosilogy concerned with holistic and integrative exploration of phenomena and events. There are aspects of the systems approach that are ontological and aspects that are epistemological, and aspects that are at once both and should not be circumscribed to either. (p. 8)

A Unifying Theory. A primary goal of systems theory was to revive the unity of science (Von Bertelannfy, 1968). Systems theory argues that no matter how complex or diverse the world, it is possible to find different types of organization in it and that this organization can be described by principles which are independent from the specific domain being investigated. The uncovering of these general laws will provide a way to analyze and solve problems in any domain pertaining to any type of system. Systems theory, serves as a unifying theory in that it provides a "framework of structure on which to hang the flesh and blood of particular disciplines and

particular subject matters in an orderly and coherent corpus of knowledge" (Boulding, 1956, p. 10). Acting as a meta-theory per se, it capitalizes on parallelisms in multiple disciplines and organizes concepts, objects, and relationships in such a way as to overcome the limitations of any one theory.

Why Systems Theory?

After this brief review of the scope and meaning of systems theory the question must be raised as to whether HRD has any choice but to fully embrace systems theory. If we agree that we serve those in organizations, even organizations themselves, we must adopt the science of systems.

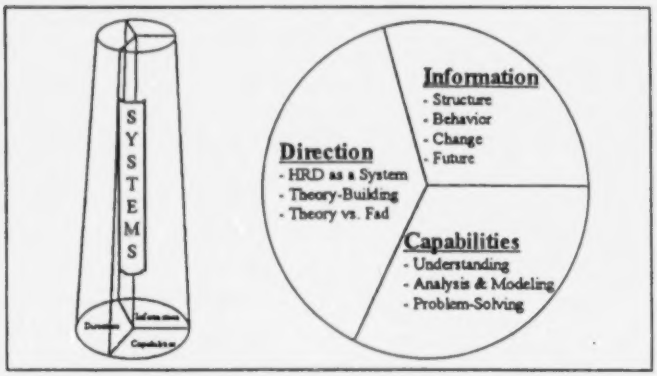
Organizations are systems. A system is defined here as a collection of elements where the performance of the whole is affected by every one of the parts and the way that any part affects the whole depends on what at least one other part is doing. Although there remains some critique of using the "organization as organism" metaphor, organizations can be viewed as living systems of discernible wholes that have lives of their own which they manifest through their processes, structures, and sub-systems (Jaros & Dostal, 1995). The biggest difference between organizations and other living systems is that they are multi-minded, a fact which HRD has never disputed.

Systems theory provides a common conception of organizations—an organizer or conceptual frame through which HRD can ensure holistic understanding of its subject. It also provides analysis methodologies capable of including multiple variables. For these important two reasons, it is viewed as the only meaningful way to comprehend the organization as a system.

The Support Provided to HRD by Systems Theory

It is not possible to provide a comprehensive review of the multiple ways in which systems theory contributes valuable knowledge to HRD. However, some general themes can be drawn from the literature and grouped into conceptual categories. A cross-section of the systems leg of the three-

Figure 1. A cross-section of the Systems Leg: Contributions of Systems Theory.



legged stool proposed by Swanson (1998) visually depicts these three categories—three ways that systems theory supports HRD (Figure 1). It provides (a) information: knowledge or data about systems, (b) capabilities: the potential to act, and (c) direction: guidance for a fields' activities and development.

Information Provided by Systems Theory A primary goal of systems theory is to uncover information about systems. During the last 40 years a large amount of knowledge has been compiled that can help HRD professionals understand the basic structure and essences of systems parts and wholes. Four distinct themes, or areas, of information began to emerge from

the literature review conducted by this author. A description of each area as well as a cursory discussion of the implications resulting from that knowledge are provided below.

Structure of Systems. Systems theory has sought to understand the basic structure of systems—the way that their parts are arranged, the interrelation of parts to other parts and of wholes to the environment, and the purposes of the system design. Although some systems scientists propose that the structure of a system is hardly separable from its functioning or behavior, others study structure specifically and agree that there are specific elements that provide necessary infrastructure (such as boundaries, feedback structures, and mechanisms that serve specific purposes). Prigogine and Stengers (1984), for example, discovered that systems in diseqillibribum produce new structures spontaneously from the disorder. Field theory, commonly discussed related to organizational development, emerged in the 1970's as an explanation of the empty space in systems that affect the structure. Finally, the issue of levels in complex systems has begun to attract scholarly attention.

Behavior of Systems. The behavior of a system must be understood before it can be influenced. Systems theorists conduct considerable research into the processes and behaviors of a system. It is not possible here to offer a comprehensive inventory of the plethora of information in this area. A brief account, though, demonstrates how extensive it is and how much key information is available for HRD to tap to better understand the behavior of systems.

Katz and Kahn (1966) identified nine common characteristics of open systems that help to inform HRD of the basic character of systems. To date, seventeen laws of complexity have been discovered and can be classified in a matrix particularly relevant to behavior-outcomes (Warfield, 1995). McLagan (1989) discusses processes unique to self-creating systems. Dooley (1996) offers theoretical propositions of complex adaptive systems. The entire field of cybernetics exists for the primary goal of understanding information processing and how non-linear feedback guides systems behavior. Finally, chaos and emerging fields of complexity inform us that apparent random behavior of a system actually reveals an underlying pattern and order and that complex systems are deterministic (that is, they have something that is determining their behavior).

Systems theory acknowledges that change is part of the very fabric of systems. A systems sub-field, population ecology, focuses almost entirely on the potential evolution of the system and posits that actual equilibrium in a system is equal to death, underscoring how systems must evolve, grow, and change to survive. It has taught us to view change as the activation of a system's inherent potential for transformation. The field of ontogeny supports this evolutionary perspective in developing ways to study the history of structural change in a unity without loss of organization in that unity (Dooley, 1995).

Systems theory is also increasingly probing for a deeper understanding of the nature and processes of change in systems. Findings in systems theory inform us that systems sensitive to initial conditions are fairly unpredictable in that minor changes can cause huge fluctuations through amplification. Or, conversely, that some changes in systems can have no apparent affect at all. We also know from the theory that (a) systems behavior gets worse before it grows better, (b) systems tend towards equilibrium (thus, to expect resistance to incremental change), and (c) changes in the essential nature of a system take place when a control parameter passes a critical threshold or biurfication point (Dooley, 1996). From the field of chaos and complexity, we are growing to understand that a system is creative not when all of its components pull in same direction, but when they generate tension by pulling in contradictory directions (Stacey, 1992). Systems theory renders the complex dynamics of change more comprehensible through the uncovering of general principles about the nature of change.

The Future in Systems. There have been many distinguished systems scientists who have also been very active in the study of the future. Systems theory contributed a rather revolutionary element to futures theory in that it surfaced the reality that the future is *emergent*—it is created by and emerges from self-organization and the interaction of its members (Stacey, 1992).

What does this mean? This means that emergent systems are adaptable, evolvable, boundless, resilient and are *not* optimal, controllable, or predictable. The literature emerging out

of chaos, in particular, informs us that the future is unpredictable due to a system's sensitivity to initial conditions as well as specific characteristics being discovered about emergent systems. Attempting to perform traditional strategic planning given this information is a rather futile exercise. In a systems approach, rather, the focus of inquiry is on the general character of a system's long-term behavior. There is on-going pressure to develop improved ways of understanding the qualitative patterns that emerge, how to increase the ability of a system to cope with its emerging future, and how to use evolution as a tool.

Capabilities Offered by Systems Theory Systems theory offers a specific contribution that, beyond simply the information described above, affects how things are seen or done. It is in this way that systems theory provides HRD with *capabilities*—the potential to act.

Understanding of Wholes & Complexity. Some might find it strange that this theme has been categorized as a capability. However, it is placed here to sufficiently recognize the perspective contributed by the ontology and epistemology discussed earlier in this paper. Information provided by systems theory is simply raw data without professionals to use it to act in ways that are unique in what can often be a mechanistic, reductionist environment. This perspective enables HRD professionals to see wholes. It enables us, if we accept and utilize systems as a foundational theory, to set critical standards for our profession that demand the unfolding of the whole to seek understanding. The conceptual importance of the "whole" cannot be minimized in HRD, and it has great implications. It acknowledges that systems have a life of their own separate from their parts, focuses on the interactions between the parts rather than the variables themselves, concedes that cause and effect are distant in time and space, and emphasizes that the nature of a system is a continuing perception and deception—a continual reviewing of the world.

Systems theory also offers a unique capability rooted in its perspective on the complexity that organizations face. This includes understanding the environment and its impact on systems as well as the complexities within systems. These types of understandings better position systems professionals to deal with the unpredictability inherent in systems, and in fact, to recognize the need for non-linear feedback and structural instability as a source of innovation and growth. Furthermore, current chaos literature reveals that chaos methods are being discussed as tools to simplify decisions made in conditions of complexity. Guastello (1995) asserts that the tool kit of nonlinear dynamical systems theory consists of attractor and repellor forces, stabilities and instabilities, biurfication and self-organization, fractal geometry, the distinction between evolutionary and revolutionary change, and catastrophes and discontinuous change. Although that may be somewhat overstated, it does redirect the potential of HRD to act and forces the development of a new capabilities.

Methodologies for Analysis and Modeling. Systems theory offers much in the way of describing, analyzing, and creating models of systems. These methods facilitate the analysis and modeling of complex interpersonal, inter-group, and human/nature interactions without reducing the subject-matter to the level of individual agents. The key is to utilize methods that allow the abstraction of certain details of structure and component, while concentrating on the dynamics that define the characteristic functions, properties, and relationships—this simplification is coined 'reduction to dynamics'(Laszlo & Laszlo, 1997). There are multiple analysis and modeling approaches grounded in the systems approach to be reviewed in the literature. Generally they entail identification of multiple elements around and in a system and a refocusing on the whole, integrating what was learned in an understanding of the overall phenomena.

Problem-Solving Approaches. Systems theory offers two things in terms of approaching problem-solving in applied sciences such as HRD. First, systems theorists *actually* start from the problem, not some preconceived notion of a model or a solution. Once the manifestation of the problem has been identified and described, they proceed inward to the sub-systems and outward to the environment (Laszlo & Laszlo, 1997). Second, systems theory is the antithesis of the "one-tool-fits all" mentality. Rather, the theory accepts complexity, freeing problem-solvers from causality and linearity and fostering the identification of patterns and tools that apply to different entities. Furthermore, systems theory encourages drawing on multiple

disciplines without being unduly restricted from points of view within those disciplines (McLagan, 1989).

Direction Provided by Systems Theory Finally, it is suggested that systems theory can serve as a guiding force that offers direction for a discipline's activities and future. Interpretations grounded in systems theory can help to build the case for the structure and behavior of HRD.

HRD as a System. There continues to be much discussion about the purpose, function, and definition of HRD (Ruona & Swanson, in-press). Further work on how HRD will conceive of itself is imperative to ensure a robust future for the field. While there have been multiple proposals to conceive of HRD as a system, there continues to be no firm agreement or discussion of the implications of such a conception (Willis, 1997). Systems theory provides guidance for identifying the fields' contexts and boundaries, actual versus desired goals, inputs, processes, and outputs, modes of operation, constraints, various systems states, and roles.

Theory-Building in HRD. Systems theory can enhance the development of theory in HRD in a few ways. First, it serves as a unifier with other disciplines and sciences in the spirit of its founder. Von Bertelannfy (1968) called for the unity of science through an interdisciplinary theory that sought to integrate findings into "an isomorphy of laws in different fields" (p. 48). This isomorphy needs to be built at two levels. On a micro-level, it can assist in the organization of HRD's "various practical experiences into some formal, theoretical structure that will be useful in advancing our practice and that in turn will provide a basis for further theory building" (Jacobs, 1989, p. 27). On a macro-level, systems theory provides a foundation on which to acknowledge how interdisciplinary it really is and contribute to the isomorphy integrating those disciplines.

Secondly, systems theory provides relief from mechanistic approaches and a rationale for rejecting principles based on the closed-system mentality (Kast & Rosenzwig, 1972). The theory requires a new heuristic other than reducing things to their components—that is, focusing on wholes, dynamics, and general theory constructs.

Finally, systems theory provides great insight into the process of theory-building. It offers guidance about the limits of theoretical generalization. Although a motivation undergirding the theory is the unity of science and discovery of general systems principles and laws, it should be noted that systems scientists take great pains to avoid the trap of creating theory that explains 'everything' but actually explains nothing. The goal of systems theory is to build theory that explains a lot and has tentacles linking it to other general theories whose purposes it is to describe a particular class of phenomena (Guastello, 1995).

Theory versus "Fad". Systems theory provides knowledge of the nature and behavior of systems. In this knowledge is once again found a capability—the capability to fight against the propagation of fads. Most of these types of solutions are only partial, focusing on parts that gurus can easily see, rather than a holistic view. They typically lack an overall understanding of complexity and how a system copes with the implications. Systems theory is not a panacea or an easy '6-easy step' kind of thing. It is hard. However, it provides a foundation that facilitates a thorough understanding of complex situations and systems. This is the strongest way to increase the likelihood of appropriate action. Professionals embracing systems theory as a foundation of HRD are best positioned to influence other practitioners to change their perception of the development and the unleashing of expertise in systems. This is the very nature of scientific revolution (Kuhn, 1970).

Current Limitations of Systems Theory as a Foundation for HRD

Even in the limited space of this paper, it would be incomplete to not acknowledge that systems theory has its limitations. Some of the current limitations are noted in Figure 2 in terms of how they impact theory and practice. These issues provide ample challenges to HRD professionals. Most of the issues can be overcome through research, development, and increased dialogue

between theoreticians and practitioners as well as those who prescribe to systems theory and those that don't.

Relation to Other Proposed Theoretical Foundations

Swanson (1998) proposes that three theoretical foundations comprise the foundation of HRD. Implicit in this proposal, at least for this author, is that it is the *integration* of these three theories that will equip HRD to contend with the challenges it is called upon to address. In this sense, the whole of the integrated theory stemming from these foundations will be larger than the sum of the parts and will be unique to HRD (Ruona & Swanson, in-press). The disciplines complement one another nicely. There appears to be nothing inherently in conflict between the theories. There are only minor issues that arise and may need to be addressed as HRD begins to integrate the theories.

Figure 2. Current Limitations of Systems Theory as a Foundation for HRD.

Theoretical Limitations	Practical Limitations
• Theory is complex and "big". • Provides more information about dynamics between the parts, than it does about the parts themselves. • Biological model may ignore social-psychological nature of social systems (Katz & Kahn, 1966). • Can be misinterpreted as not offering a definite body of knowledge since not one mainstream approach. • Lacking in reliable methods of "total" conception of the whole. • Requires subjectivity. • Normative implications of systems theory not clarified (Dash, 1995). • Requires more empirical data on systems applications and concepts relative to theoretical formulations. • Risk of losing scientific depth in favor of breadth. • Places great demands on the field in terms of theory-building. • Requires knowledge and skill that are not readily available in academia.	• Can be viewed as constraint to practitioners because time-consuming and costly. • Raises the risk of becoming obsessed with system and forgetting individual (Bierma, 1997). • Responsibilities of the systems practitioners have yet to be clearly articulated and developed. • Necessitates interventions that may lie outside of the mandate of the "client" (Dash, 1995). • Coercive structures in organizations have to be confronted as they undermine the pluralist spirit of systems approach (Dash, 1995).

Economic Theory Economics is quite aligned with systems theory in acknowledging that the ultimate purpose of systems is survival. The two theories agree that systems are teleological—working towards a desired end result. However, current-day teleology, has expanded its notions to differentiate between purposes and goals. It acknowledges that a system may have many goals that must be considered. Systems theorists are cautioned to not blur goals with the idea of functioning. A second disconnect that may arise is an organization's limited view of economics that may discourage truly systemic ideas that do not show their benefits until the long-run.

Psychological Theory Systems theory and psychological theory align in the belief that the organization is comprised of multi-minded individuals engaging in patterned activities (Jaros & Dostal, 1995). However, systems theory goes further to acknowledge that the organization is exists separate from the sum of its parts—a proposition not embraced by psychologists who remain individually-focused. The implications of this disconnect will need to be more fully processed.

Conclusion

This paper has attempted to investigate the contribution of systems theory to HRD. It is hoped that it offers a unique synthesis of the literature in describing its scope and meaning as well as a framework to organize its multiple contributions to HRD theory and practice.

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Psychology and the Discipline of HRD – Contributions and Limitations

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Psychology has long provided a core theoretical base for HRD. Contemporary HRD extends beyond psychology to embrace multiple theoretical bases. This paper examines psychology's theoretical contributions to the discipline of HRD. It is argued that psychological theories are both powerful and limited as a foundation for HRD. Specific psychological theories and their conceptual relationships with economics and systems theory are discussed.

Psychology has been identified as one of the core theories of Human Resource Development (Passmore, 1997, Swanson, 1994). There can be little question that the discipline of psychology has made, and continues to make, major contributions to the discipline of HRD. Indeed, references from industrial psychology, educational psychology, cognitive psychology and developmental psychology are common in our research. It is psychology that keeps HRD's focus on the individual.

However, there are those who practice HRD as if it were little more than applied psychology. This approach results in overemphasis on the individual to the exclusion of other vital components of our discipline. It is the thesis of this symposium, and this paper, that there can also be little question that psychology is inadequate by itself to define the discipline of HRD. The purpose of this paper is to systematically identify some key issues surrounding psychology's contribution to defining the discipline of HRD.

Psychology and HRD

Understanding Psychology as a Discipline In order to understand psychology as a field, one must first differentiate between what are alternately called foundational or framework theories (Wellman & Gellman, 1992) and systems of psychology (Lundin, 1991), versus specific theories. "Framework theories outline the ontology and the basic causal devises for their specific theories, thereby defining a coherent form of reasoning about a particular set of phenomena (Wellman & Gellman, 1992, 9. 342)." A system has been defined as "a framework or scaffolding which permits the scientist to arrange his data in an orderly meaningful way. (Lundin, 1991, p. 2)." In psychology, these systems are also known as movements or schools.

Systems or framework theories then inspire specific theories that propose specific formal propositions. For example, behaviorism is a framework theory or system because is defines a particular set of assumptions about human behavior. Within that system are a variety of theorists (e.g. Watson, Skinner) that vary in their specific propositions about behaviorism, but nonetheless agree as to the underlying epistemology. Our interest here is not in specific theories, but rather the underlying framework theories or systems from psychology that are in turn foundational theories for the discipline of HRD. Continuing the previous example, we will not discuss which theory of behaviorism is appropriate, but rather whether behaviorism is a foundational theory for HRD.

There is no universal agreement among psychology scholars as to which theories are specific versus foundational theories, and some theorists are "bridge" theorists in that they attempt to integrate multiple systems. Furthermore, many noted psychologists can be classified in multiple categories (e.g. is Bandura a behaviorist or a cognitivist) Thus, it is difficult to find one "best" classification. For this discussion, Lundin (1991) and Brennan's (1994) classifications of twentieth century psychology systems have been integrated to generate the following list of candidates to be included as foundational theories for HRD:

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- Functionalism
- Behaviorism
- Gestalt
  - Classic
  - Field Theory
- Psychoanalysis
- "Third Force"
  - Humanistic
  - Existential
- Cognitive
- Emerging Systems
  - Social Psychology
  - Developmental Psychology

Interestingly, some psychologists have called for the creation of a "meta-discipline" of theoretical psychology to recapture the theoretical roots of psychology (Slife & Williams, 1997). They use some of the same language scholars in HRD do to bemoan movement away from theory "toward models, techniques, and micro-theories in the more modern sense (Slife & Williams, 1997, p. 118)." Due in large part to the emergence of applied or functional psychology in the early 1900's (Watson & Evans, 1991), psychology has moved away from the creation of broad theories such as behaviorism and cognitivism, to the scientific testing of theories and models.

Foundation Theories for HRD Within psychology, Swanson (1998) proposes three foundational psychological theories: Gestalt, Behavioral, and Cognitive psychology. Table 1 summarizes these three foundational theories and selected contributions to the discipline of HRD.

Table 1 – Foundational Psychological Theories and their Contribution to HRD

Foundation Theory	Representative Theorists	Contributions to HRD
Gestalt	Wertheimer, Kofka, Kohler, Lewin	• Focus on the whole person • Holistic view of organizations and individuals
Behaviorism	Watson, Pavlov, Thorndike,	• How external environments affect human behavior • Reward and motivation systems • Goal setting
Cognitive	Piaget, Bruner, Piaget	• How humans process information • Foundation for instructional design • How humans make meaning of their experiences

Relationship to Other Core Theories of HRD Swanson (1998) also proposes that the other two foundation theories of HRD are economics and systems theory. Yet unresolved is the relationship between psychology and the other two core domains. While there may be many micro level linkages, at the macro level a possible relationship is that shown below in Figure 1. This figure suggests that:

- *Behaviorism* provides the link between psychology of the individual and economic theory. One of behaviorism's strengths is its emphasis on external reinforcers of human behavior. Human behavior within organizations is deeply affected by organizational performance goals as represented by individual performance criteria and associated rewards. This performance system is largely economic, as described by Torraco (1998). Behaviorism provides the theoretical linkage between the external performance system and individual behavior.
- *Gestalt* psychology is primarily concerned with the integration of the parts of the self into the whole person. Conceptually, this is the same contribution that systems theory makes to understanding organizations—the focus on the whole and the interaction of the parts, rather than reducing it to just its parts. In addition to helping the HRD profession focus on the whole person, the emphasis on holism also logically leads to a holistic view of the person embedded in the organizational system.

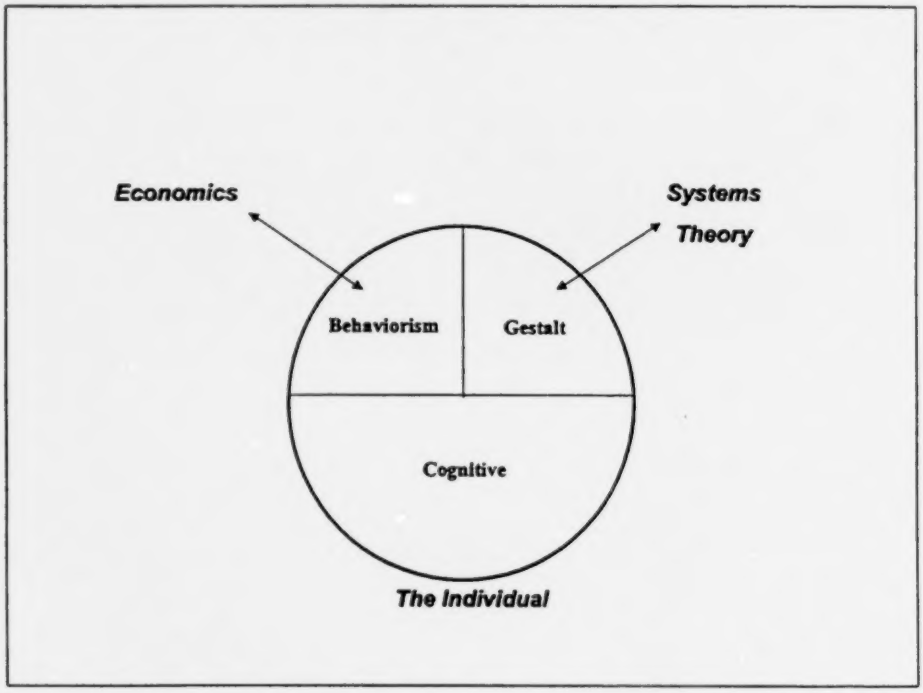
- *Cognitivism* is primarily focused on the self. Cognitive psychology explains how individuals make meaning of what they experience. It emphasizes that individuals are not simply influenced by external factors, but make decisions about those influences and their meaning. In the constellation of psychological theories relevant to HRD, it is cognitive psychology that exclusively focuses on the internal processes of individuals. It helps explain how people learn and how they make sense of the organizational system.

Emerging Foundational Theories of Psychology

There is little question that, of the well-established foundation theories in psychology, these three are the appropriate ones. Others, such as functionalism and psychoanalytic theory simply don't fit. That said, two other emerging psychological theories point out possible weaknesses in this scheme, and offer possible theoretical solutions.

Individual Growth Perspective None of these three theories fully recognizes the potential that humans have to expand and develop capabilities well beyond those immediately apparent. Gestalt psychology comes closest, but still is focused primarily on how people perceive, think, and learn in the here and now (Hunt, 1993). It still leaves unexplained the human processes that underlie the motivation to grow and develop. It is this potential for growth and expansion of human capabilities that undergirds human capital theory in economics.

Figure 1 – Relationship between psychological theories, economics and systems theory at the individual level



Humanistic psychology is still a somewhat loosely formed movement which views humans as self-actualizing, self-directing beings. It is one of the roots for much of adult learning theory (Knowles, Holton, & Swanson, in press). Two of its most recognizable names are Carl Rogers and Abraham Maslow. While still not as theoretically "tight" as behaviorism or

cognitivism, it nonetheless makes contributions in explaining individuals' motivation and potential. A core presumption of some HRD models is that employees have intrinsic motivation to grow. While some growth can be explained from the behavioristic notion that people grow to seek organizational rewards, a strictly behaviorist view of this phenomena is much too limited. The three psychological theories proposed above (gestalt, behaviorism, cognitive) may fall short in supporting HRD's position that humans are capable of reaching far higher potential that justifies long-term investment to build expertise.

Social System of Organizations A second area of concern is whether these three psychological theories, along with systems theory and behaviorism, provide adequate theory to account for individuals within the social system of organizations. Organization development specialists are particularly focused on elements of the social system such as organizational culture, power and politics, group dynamics, inter-group communication, and how these social systems change (Cummings & Worley, 1997). The question is whether the core theories proposed provide an adequate foundation to understand the individual within the organizational social system.

It is these very concerns that has led to the emergence of social psychology which studies interactions between people and groups. It too is seen by some as an eclectic discipline lacking any unifying theory (Hunt, 1993), while others are more generous in describing it as still emerging in its theoretical base (Brennan, 1994). In some respects, social psychology is much like HRD in building on other theories while creating new theory of its own. Wiggins, Wiggins, & Vander Zanden (1994) define social psychology as "the study of behavior, thoughts, and feelings of an individual or interacting individuals and their relationships with larger social units (p. 17)." According to them, social psychology consists of four theoretical streams, the first two from psychology and the second two from sociology:

1. *Behavioral perspective* – Social learning and social exchange theory
2. *Cognitive perspective* – Field theory, attribution theory, and social learning of attitudes
3. *Structural perspective* – Role theory, expectation states theory, and postmodernism,
4. *Interactionist perspective* – Symbolic interaction theory, identity theory, & ethnomethodology

Frankly, I offer it more as a "placeholder" than with certainty that it is a foundational theory. What social psychology emphasizes, and seems lacking in this HRD discipline model, is some theory base that defines the social system of an organization. There are deep roots in some aspects of HRD that have relationships with social psychology. For example, Lewin's (a social psychologist) force field theory is a core model for organizational change and development. Social psychology also focuses on humans in groups, which is clearly a major issue in HRD. If social psychology is not the correct foundational theory, then we must identify a component that provides a base for HRD's work in the social systems of organizations.

Summary Thomas Kuhn (1970) cautions us that the emergence of new theory is rarely an orderly or quick process. While both humanistic and social psychology lack the conceptual clarity of cognitivism, behaviorism, and gestalt psychology, they emerged to fill the need to explain human phenomena that the others did not adequately explain. The question for HRD to debate is whether these same holes are important considerations for HRD theory. If so, then these two emerging areas of psychology—or some other theory—should be carefully considered.

Limitations of Psychology

Issue One: Domains of Performance Two predominant performance frameworks are the Rummler and Brache model (1995) and Swanson's expanded framework (Swanson, 1994). Because Swanson's framework uses five performance variables, it is a more powerful lens for this analysis. He suggests that there are three levels of performance and five performance variables as shown in Figure 2.

The dashed box identifies the dimensions of performance in which psychology makes its *core contributions*. By definition, psychology's primary focus is on the individual. Psychologists

do consider organizational context, but as environmental influences on the individual, not as a core area of focus.

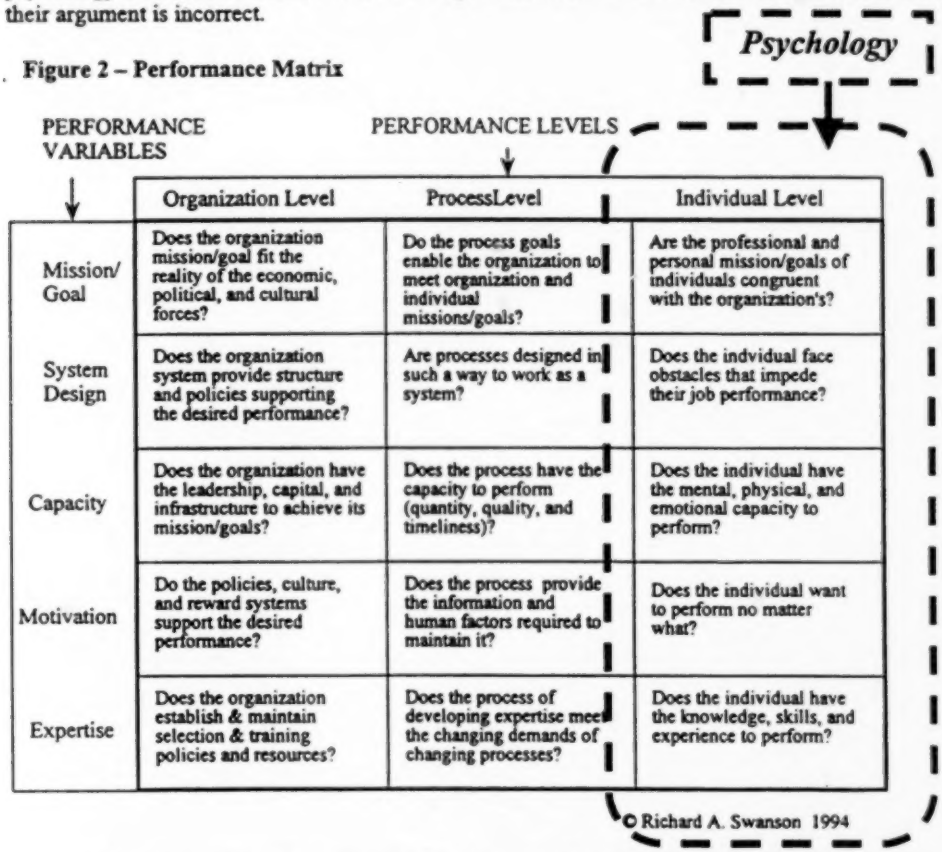
Historically, HRD was also defined at the individual level (Ruona & Swanson, 1997). HRD is increasingly considering all three levels (individual, process, and organizational) as core areas of focus. The implications of this for HRD as a discipline are significant. If the discipline of HRD is a multi-level discipline, then we can draw heavily upon psychology as a foundation discipline, but also must also realize it is inadequate by itself.

The psychological lens, while powerful, leads to incorrect or inadequate conceptions of HRD when used alone. For example, recently Barrie and Pace (1997) stated that:

> *"The question of whether the field of human resource development is in the business of improving performance or of enhancing learning in organizations has not been sufficiently explored. Succinctly put, advocates argue that the field should focus on creating behavioral changes or on fostering a cognitive perspective in organization members (p. 335)."* (emphasis added)

The authors equate the performance perspective with the behavioral perspective in psychology, which is incorrect. Performance theory is concerned with the outputs and outcomes of humans in organizations, and the extent to which cognitive strategies improve them. From an applied psychology definition of HRD, theirs is the logical conclusion. From a broader theoretical base, their argument is incorrect.

Figure 2 – Performance Matrix


Psychology
PERFORMANCE VARIABLES
PERFORMANCE LEVELS
Organization Level
ProcessLevel
Individual Level
Mission/ Goal
Does the organization mission/goal fit the reality of the economic, political, and cultural forces?
Do the process goals enable the organization to meet organization and individual missions/goals?
Are the professional and personal mission/goals of individuals congruent with the organization's?
System Design
Does the organization system provide structure and policies supporting the desired performance?
Are processes designed in such a way to work as a system?
Does the indvidual face obstacles that impede their job performance?
Capacity
Does the organization have the leadership, capital, and infrastructure to achieve its mission/goals?
Does the process have the capacity to perform (quantity, quality, and timeliness)?
Does the individual have the mental, physical, and emotional capacity to perform?
Motivation
Do the policies, culture, and reward systems support the desired performance?
Does the process provide the information and human factors required to maintain it?
Does the individual want to perform no matter what?
Expertise
Does the organization establish & maintain selection & training policies and resources?
Does the process of developing expertise meet the changing demands of changing processes?
Does the individual have the knowledge, skills, and experience to perform?
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Issue Two: Building Capacity for Performance Holton (in press) presents an expanded framework for conceptualizing performance domains in HRD that offers another lens within which to consider psychology's contribution to HRD. One important addition is the integration of Kaplan and Norton (1996) two categories of performance measures: outcomes and drivers.

Unfortunately, they do not offer concise definitions of either. For our purposes, outcomes are measures of effectiveness or efficiency relative to core outputs of the system, sub-system, process or individual. The most typical are financial indicators (profit, ROI, etc.) and productivity measures (units of goods or services produced) and are often generic across companies. According to Kaplan and Norton, these measures tend to be lag indicators in that they reflect what has occurred or has been accomplished in relation to core outcomes.

Drivers measure elements of performance that are expected to sustain or increase system, sub-system, process, or individual ability and capacity to be more effective or efficient in the future. Thus, they are leading indicators of future outcomes and tend to be unique for particular business units. Together with outcome measures, they describe the hypothesized cause and effect relationships in the organization's strategy (Kaplan & Norton, 1996). Thus, drivers should predict future outcomes. For example, for a particular company, return on investment might be the appropriate outcome measure which might be driven by customer loyalty and on-time delivery, which in turn might be driven by employee learning so internal processes are optimized. Conceptually, performance drivers could be added as a third axis to Swanson's performance levels and performance variables.

This lens further defines the limits of psychology's contribution to HRD:

- At the individual level, psychology pays only limited attention to building future capacity for individual performance.
- At other levels, performance drivers are not an area of focus for psychology.

Some areas of psychology are pre-occupied with current performance and outcomes, while HRD has a more balanced view of building capacity for future performance in addition to present performance.

Table 2: Performance Domains and Metrics

Domains of Performance	Typical Metrics for Measuring Performance Domains	
	Performance Outcomes	**Performance Drivers**
Mission	Economic Returns External metrics Market Share Profitability Mortality rate Poverty level	Societal benefits Innovation Knowledge capital Management/leadership Strategy Social responsibility
Process	Customers Quality Cost Time Product Features Market share (in product category)	Customer (needs satisfaction) Quality Innovation
Critical Performance Sub-system (team, dept., etc.)	Team effectiveness Structural sub-units performance Productivity (resource efficiency) Internal metrics Work outputs	Innovation Team/Group climate Management/leadership Ethical Performance
Individual	Productivity Work Output	Knowledge, Expertise Learning Renewal and growth Human Relations Ethical Performance Turnover Absenteeism

Learning About Research Methodology from Psychology

In addition to exploring theoretical contributions from psychology, it is also worth exploring the contributions psychology can make to our discipline through its research methodology. Psychology is well known for its rigorous research. I confess to occasionally being envious of the exceptional quality and rigor of their research and journal articles. Who can question the quality of the HRD related research published in *Personnel Psychology* or the *Journal of Applied Psychology*? I believe we have much to learn from psychology that can raise the quality of research in HRD.

At the same time, I have also come to realize that psychologists have become dangerously close to becoming "methodologically constipated". Let me relay a story. I recently submitted an article to several psychology journals that was rejected. This particular study was a longitudinal one that integrated a number of variables that had previously been studied separately in psychology literature, but never jointly. The purpose of the article was to examine their joint impact on turnover.

I was appalled at the suggestions from some reviewers. All reviewers agreed that the variables chosen were present in the system under study and, yes, it would be nice to study them jointly. But, as often happens, the methodology gets messier (though not invalid) when studying larger systems. What was appalling was that some reviewers actually suggested that I throw away many of the variables in order to make the methodology cleaner! Despite their agreement that the system of variables needed to be studied, they would prefer cleaner methodology to attempting to answer meaningful questions. While some could accuse me of sour grapes, the fact that a reviewer would even consider this suggestion suggests that there is a tendency for research in psychology to lose sight of the purpose for which the research is being conducted.

HRD as a discipline has much to learn from psychology research:

- Their commitment to rigorous research is admirable.
- The tradition of research leading practice is much more firmly rooted in psychology than HRD.
- Psychology has a stronger commitment to developing valid and reliable measures of constructs.
- Quantitative research methods are extremely strong.

At the same time, HRD has some research traditions developing from which psychology could also benefit.

- Qualitative research seems rare in industrial and educational psychology. These are powerful tools for theory development that are important to HRD research.
- Whole systems research is difficult, unwieldy, complicated, and inherently messy—but necessary. I do not believe that we can always study human systems in organizations by piecing together series of limited scope studies. Much like the business strategy researchers, we have to learn how to study bigger systems.
- HRD researchers in general have a stronger commitment to linking their research to practice. As such, they are more willing to let practice drive research, rather than just looking to theory.

Conclusion

As part of a series of papers on the core theories of HRD, this paper was primarily designed to initiate an ongoing dialogue to define the discipline of HRD. HRD has, and always will have psychology as one of its core foundations. It is psychology that reminds us that our discipline is one concerned with humans in organizations. It is important that we recognize its contributions, as well as its limitations as a lens through which to view HRD.

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Economics—Human Capital Theory and Human Resource Development

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The development of a theory base to support the rapidly growing field of HRD is the most important issue facing HRD scholars today. The demands upon HRD practice to meet the needs of a diverse workforce in a rapidly changing work environment have already far outstripped the ability of HRD's emerging theory base to guide future research and practice. If HRD is to grow beyond its present stage, it needs a rich and comprehensive theory base. Scholarly attention to HRD theory development is needed. This paper argues for including economics as a central element of HRD's theoretical foundation.

This paper addresses the most important issue facing HRD scholars today—developing a theoretical foundation to provide the intellectual basis for the further development of the HRD field. The increasing demands upon HRD practice, and the need for research to guide practice, have already far outstripped HRD's emerging theory base. HRD is among the youngest disciplines in the social sciences. If HRD is to grow beyond its present stage—now barely into the "adolescence" of its life, it needs its own unique theory base. An important need exists for further theory development in HRD.

Beyond directing the attention of HRD scholars to theory building, the main premise of this paper is that economics be included as a central element of HRD's theoretical foundation. To this end, the paper discusses economics, human capital theory, and their importance to HRD's emerging theory base. An exposition of the central values and principles in organizations supported by economics is provided. Finally, as a prelude to further theory development in HRD, the nature of theory building is briefly explored.

The Challenge to HRD Posed by Theory

Interrelationships among behavioral sciences such as education, psychology, sociology, and organization behavior necessitate a certain cross-fertilization of theory across these fields. One would expect the theories of related fields that all address human behavior in social contexts, as these fields do, to share common theoretical elements. Theories of learning, motivation, group dynamics, and social/organizational structures are common to these fields. In addition to the elements of theory that are shared among fields, each discipline generates theory unique to its own domains of research and practice. Psychologists and economists, although both representing social sciences, view the world through their own unique disciplinary lenses. The psychologist is more interested in factors related to individual behavior, whereas economics is concerned with the allocation of resources at higher levels of aggregation. Consequently, each discipline relies on distinct bodies of knowledge supported by theory, some of which is unique to that discipline. A theory base robust enough to support the present practices and future developments of a discipline requires a rich, theoretical system synthesized from various theoretical elements, some of which are unique to the field, while others are shared across fields. Building on relevant theories from related fields is an accepted, and, for HRD, a necessary part of theory development. The challenge for HRD scholars is that so much remains to be done in both selecting elements and synthesizing a theory base.

The purpose of this paper, and the symposium within which it is presented, is to stimulate discussion among HRD scholars about the importance of theory to HRD's future development and the rightful components of such a theory base. This paper argues for including economics as a central element of HRD's theoretical foundation.

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What is Economics?

Economics addresses the allocation of scarce resources among a variety of human wants. Economics represents human wants and the scarcity of resources as essential and perennial elements in the study of any human activity. Like other social sciences, economics deals with human behavior that cannot be controlled as can, for example, the physical mechanisms used by an engineer. Economics uses society as its laboratory and cannot engage in the kind of experimentation favored by the physicist or chemist. As with the social sciences in general, economics is not an exact science and predictions of economic developments are subject to error. According to Lewis (1977), however, economics is the social science "with the most sophisticated body of theory—that is, the one with the greatest predictability accuracy of all the social sciences" (p. 43). For comprehensive treatments of economics, please see Samuelson (1980), Milgrom and John (1992), and Shughart, Chappell and Cottle (1993).

What is Human Capital Theory?

While Theodore Schultz' (1961) address to the American Economic Association was the first presentation of research on the return-on-investment in human capital, Gary S. Becker is generally credited as the leading developer of human capital theory. Classical economic theory considers labor a commodity that can be bought and sold. Because of the negative connotations associated with the exploitation of labor by capital, it is understandable that human capital theory is still suspect in some circles. However, unlike the meaning traditionally associated with the term "labor," human capital refers to the knowledge, expertise and skill one accumulates through education and training. Emphasizing the social and economic importance of human capital theory, Becker (1993) quotes the economist Alfred Marshall's dictum that, "the most valuable of all capital is that invested in human beings" (p. 27). Becker distinguished firm-specific human capital form general-purpose human capital. Examples of firm-specific human capital include expertise obtained through education and training in management information systems, accounting procedures, or other expertise specific to a particular firm. General-purpose human capital is knowledge gained through education and training in areas of value to a variety of firms such as generic skills in sales and marketing, or expertise in human resource management. Regardless of the application, Becker considers education and training to be the most important investments in human capital.

Figure 1, Model of Human Capital Theory (below), presents the key relationships in human capital theory and the assumptions underlying these relationships.

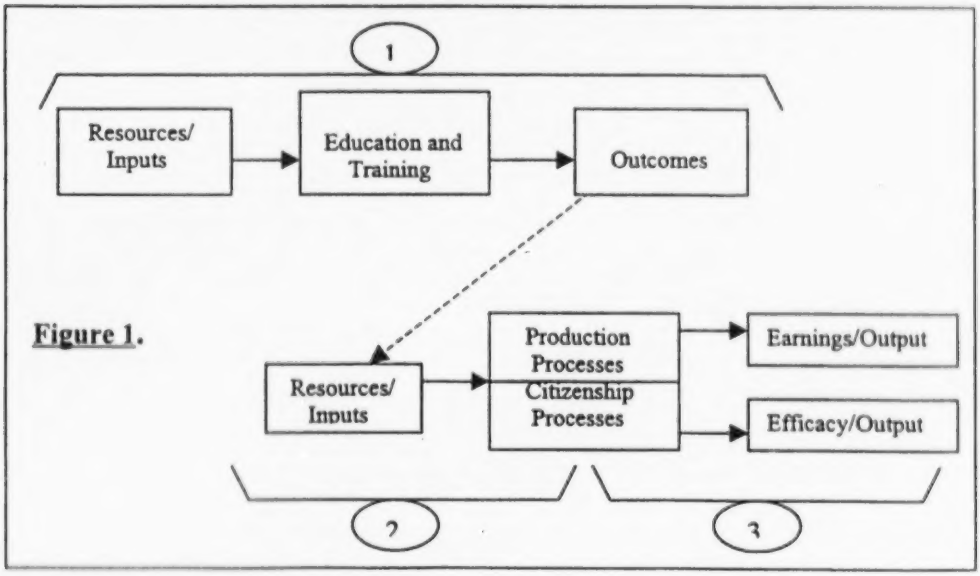

Figure 1.

Key relationships and assumptions of human capital theory are represented in Figure 1 by the numbered brackets 1, 2, and 3.

- ***Relationship 1*** represents the concept of production functions as applied to education and training. The key assumption underlying this relationship is that investments in education and training result in increased learning. Relationship 1 includes the human capital variables assessed using cost-effectiveness analysis.
- ***Relationship 2*** represents the human capital relationship between learning and increased productivity. The key assumption underlying this relationship is that increased learning does, in fact, result in increased productivity.
- ***Relationship 3*** represents the human capital relationship between increased productivity and increased wages and business earnings. The key assumption underlying this relationship is that increased productivity does, in fact, result increased wages for individuals and earnings for businesses. An equally important human capital relationship represented by Relationship 3 is that between the citizenship processes affected by education (e.g., community involvement, voting) and enhanced social efficacy.
- ***The entire human capital continuum*** represented in Figure 1 (i.e., all the bracketed relationships as a single continuum) are assessed using return-on-investment analysis or cost-benefit analysis.

Economics, Human Capital Theory, and HRD

An exposition of the organizational values and principles supported by economics is provided in this section. These values and principles are expressed in the human capital variables discussed here.

Macroeconomic Theory. Macro-economic theory addresses the aggregate performance of an entire economy or economic system (e.g., the European economy or world economy). Macroeconomics is concerned with fiscal and monetary policy and the interaction of major determinants of economic developments such as wages, prices, employment levels, interest rates, capital investments, the distribution of income, and other factors. Macroeconomics is contrasted with microeconomics, which focuses on the individual consumer, family or firm and the determinants each factor (i.e., wages, interest rates) in particular.

Human capital theory has both macroeconomic and microeconomic implications for HRD in important areas. Workforce development at a regional or national level is what economists might call "human capital deepening" on a macroeconomic scale. The increased value of human capital derived from workforce development is likely to influence productivity, wages, prices, and other factors at an aggregate level of the economy. Conversely, the decisions made by HRD professionals in organizations are microeconomic in scope—that is, they influence the economic performance of the individual firm.

Supply and Demand. The supply of, and demand for, education and training affects the competitive position of organizations such that HRD's role becomes central to the organization's long-term viability. Classical economics posits that, on average, scarce resources are more valuable than plentiful resources. Although developed independent of economic theory, Wright, McMahan and McWilliams' (1994) resource-based view of the firm is based on the concept of supply and demand. They suggest that human resources, and HRD in particular, substantially increase the competitive position of the firm because enhance the value of the firm's human resources in ways that are (a) rare, (b) inimitable, (c) valuable, and (d) non-substitutable. Indeed, it is difficult or impossible to compete with firms whose greatest assets are embedded in their people (Barney, 1991).

Opportunity Costs. Opportunity costs are the value of opportunities foregone due to participation in a given project or intervention. By electing a particular course of action among alternatives, one necessary foregoes the opportunities offered by the alternatives. Human capital theory involves opportunity costs at several levels of HRD practice. At the individual level, participation in HRD, especially during normal working hours, incurs the opportunity costs associated with lost productivity on-the-job. This opportunity cost has traditionally been a major source of management reluctance to support certain types of HRD. Similar opportunity costs are

involved at the group or department level when work activities are foregone to participate in HRD. At the organization level, the value of opportunity costs is necessarily higher, just as is the value of increased human capital, when applied across the organization. Opportunity costs are the flip side (and sometimes the unnoticed side) of the benefits of HRD.

Agency Theory. Agency theory derives from a branch of organization theory concerned with reconciling the behavior of self-interested individual with conflicting goals within a larger organizational context where collaboration among individuals is sought. Levinthal's (1988) agency theory proposes that principals (i.e., owners) monitor performance of agents (i.e., employees) and use incentives such that employees work to achieve the principal's goals in spite of their own self-interests. Given discretion in the direction and degree of investments in human capital, agency theory suggests that principals are far more likely to promote firm-specific human capital over general-purpose human capital, which increases the ease with which employees can move to other firms.

Production Functions. Production functions are the technical or physical relationships between the inputs and outputs in a value-added process. With respect to education and training investments in human capital, we wish to know the precise inputs (resources) which enter the production (education, development) process, the precise relationship between factors within the production process, and the outputs (benefits) which result from these production processes in education (Lewis, 1977). Production functions in HRD are represented by the training options of in-house development versus vendor training, traditional versus technology-based training programs, the level of involvement and role of supervisors and managers in HRD programs.

In addition to these key human capital concepts, several economic realities facing the organizations served by HRD bear on the development of a theory base robust enough to support and extent HRD research and practice. These realities are:

- The most frequently used measures, of any sort, in organizations are financial measures.
- HRD professionals are reluctant to express their work in financial terms, even though their organizations are financially driven.
- Efficiency is a universal value, not limited to economics. Efficiency is simply a ratio of the optimal level of accomplishments relative to the effort and resources required to achieve them.

Theory Development for HRD

Dubin (1978) provides a comprehensive methodology for theory building that is particularly relevant for applied fields such as HRD. More so than other theory building strategies, Dubin's eight-phase methodology for theory building lays out an explicit roadmap for the theorist to follow. The methodology offered by Dubin, a well-known writer on theory and theory building, is frequently used as a template for building theories in the behavioral sciences. The eight phases of theory building are: (1) units (i.e., concepts) of the theory, (2) laws of interaction (among the concepts), (3) boundaries of the theory (the boundaries within which the theory is expected to apply), (4) system states of the theory (conditions under which the theory is operative), (5) propositions of the theory (logical deductions about the theory in operation), (6) empirical indicators (empirical measures used to make the propositions testable), (7) hypotheses (statements about the predicted values and relationships among the units), and (8) research (the empirical test of the predicted values and relationships). The first five phases of the methodology represent the theory building component of Dubin's model, and the last three phases represent the process of taking the theory into real world contexts to conduct empirical research. Although theorists must consider the entire scope of Dubin's model for effective theory building, theory building and empirical research are often separated, and each of these is conducted as a distinct research effort.

Economics is Central to HRD Theory. The values and principles supported by economics and human capital theory discussed above are part of the basic fabric of the organizations in which HRD professional carry out their work. Ideology aside, the reality in our culture is that economic choices are among the most important decisions made in the workplace. Given the centrality of economics, the question for HRD theory is not, "is economics an element of HRD theory?" but rather, "how important is economics as an element of HRD theory?"

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